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EXAMINER

NGUYEN, HOAN C

ART UNIT PAPER NUMBER

2871

DATE MAILED: 10/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

Applicant(s)

09/850,367

HA ET AL.

Examiner

Art Unit

HOAN C. NGUYEN

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: .

DETAILED ACTION

Response to Amendment

Applicant's arguments with respect to Amended claims 1-35, 37-46 and 48-52 have been considered but are moot in view of the new ground(s) of rejection. Therefore, **this is Final action.**

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5, 14-19, 20-24 and 52 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 cites "a fixing unit formed on the receiving unit and guiding the power supplying lines to the power supplying unit (supplying a power to the light connecting unit) to prevent the power supplying lines from being departed from the receiving unit". How can a fixing unit guide the power supplying lines to the power supplying unit? How can a fixing unit prevent the power supplying lines from being departed from the receiving unit?

Claim 14 cites the limitation “the printed circuit board is fixed to the rear surface of the receiving unit to be placed between the receiving unit and the fixing unit”. However, specification of the instant application discloses (Fig. 4) the printed circuit board 400/500 is fixed to the bottom surface of the receiving unit (bottom chassis 300) to be placed between reflection plate 254 and the fixing unit 800/900”. There is nowhere in specification and Fig. 4 discloses “the printed circuit board is fixed to the rear surface of the receiving unit to be placed between the receiving unit and the fixing unit”.

Claim 17 cites the limitation “the fixing unit is a bracket having a first end combined with the printed circuit board and a second end combined with the rear surface of the receiving means”. However, specification of the instant application discloses (Fig. 4) “the fixing unit is a bracket having a first end 800 combined with the printed circuit board 500 and a second end 900 combined with the printed circuit board 400”. There is nowhere in specification and Fig. 4 discloses “the fixing unit is a bracket having a first end combined with the printed circuit board and a second end combined with the rear surface of the receiving means”.

Claim 20 cites the limitation “the shielding unit and the printed circuit board are fixed to the receiving unit in such that a locking member extends through the first, second and third locking structure from an outside of the shielding unit toward the displaying unit”. There is nowhere in specification and Fig. 4 discloses a locking

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member extends through the first, second and third locking structure from an outside of the shielding unit toward the displaying unit.

In remarks, applicants present:

- Holes 343-345 in mold frame 600 are first locking structures (Fig. 5);
- Holes 930-932 are second locking structures (Fig. 8);
- Holes 343a-345a) are third locking structures (Fig. 21).

Therefore, a locking member must be a pin-like to go all these holes, but to where is this locking member attached for secure or lock? And nowhere in specification and figures shows the following limitations:

- “fixing unit combined with the printed circuit board and having at least one second locking structure” in claim 20. Is this mean “second locking structure forming on the printed circuit board”?
- “the fixing member has a first end combined with the printed circuit board and a second end having the second locking structure combined with the first locking structure formed on the receiving unit” in claim 22.

Claim 52 recites the limitation “a printed circuit board ... having a bottom surface located below the receiving unit”. There is insufficient antecedent basis for this limitation in the claim. Specification of the instant application discloses (Fig. 4)

- the receiving container has a bottom chassis 300 for receiving the display unit 270 (paragraph 85th).

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- The display unit 270 and the backlight assembly 250 are received in a bottom chassis 300 used as a receiving container, which is fixedly supported by means of a mold frame 600 (paragraph 102nd).
- The A/D board 400 and the inverter board 500 (circuit boards) are fixed on the rear surface of the bottom chassis 300(paragraph 106th).

There is nowhere in specification and Fig. 4 disclose "printed circuit board ... having a bottom surface located below the receiving unit (or below a bottom chassis 300 used as a receiving container)".

Claims 2-5, 14-16, 18, 19, 21-24 are rejected since they depend on the infinite claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 6-10 and 50-51 are rejected under 35 U.S.C. 102(b) as being anticipated by Murai (US5986726A).

In regard to claims 6 and 50, Murai teaches (Fig. 1) a liquid crystal display device comprising:

- displaying unit (display panel 5) for displaying an image;
- receiving unit (the light guiding plate 7) for receiving the displaying unit;

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- a printed circuit board 4 installed on a rear surface of the receiving means, for controlling an operation of the displaying means;
- shielding means (metal sheet 1) mounted on the rear surface of the receiving means, for shielding an electromagnetic wave from the displaying means and the printed circuit board.
- a connecting cable (tape carrier packages TCP 6 including the connecting cable) for connecting the displaying means to the printed circuit board (claim 7).

wherein

- the printed circuit board enhancively includes power supplying unit for supplying a power to the displaying means, which is mounted on the rear surface of the receiving means, or converting means for converting a signal (driver 61) supplied to the displaying means, which is installed on the rear surface of the receiving means (claim 8).
- the shielding means has a connection opening formed at a side wall at an end thereof, through which lines for supplying a desired voltage to the printed circuit board is connected to the printed circuit board (claim 9).
- the connection opening has a closed shape in that part of the connection opening is connected to each other, in order to improve a shielding efficiency of the electromagnetic wave by means of the shielding means (claim 10).
- wherein the receiving means includes a bottom chassis for receiving the displaying means and a mold frame for receiving the bottom chassis having an

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opening formed in a bottom surface exposing a bottom surface of the bottom chassis (claim 51).

2. Claims 13 and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Murai et al. (US5986726A).

Murai et al. teach (Figs. 1-4) a liquid crystal display device comprising:

- displaying unit (LCD 5) for displaying an image;
- receiving unit (the light guiding plate 7) for receiving the displaying unit;
- a printed circuit board 4 mounted on a rear surface of the receiving unit, for controlling the displaying unit;
- a connection cable (tape carrier packages TCP 6 including the connecting cable) for connecting the displaying means to the printed circuit board;
- fixing unit (crews 9 as Fig. 4 shown) for fixing the printed circuit board to the receiving unit.

3. Claims 13-19 and 34-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Gruenberg et al. (US5313318A).

Gruenberg et al. teach (Fig. 1) a liquid crystal display device comprising:

- displaying unit (LCD 10) for displaying an image;
- receiving unit (a plastic light guide 14) for receiving the displaying means;
- a printed circuit board 19 mounted on a rear surface of the receiving means, for controlling an operation of the displaying means;

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- a connection cable (a flexible interconnect, multiconductor flat cable, or "flex-circuit" not shown in FIG. 1.) for connecting the displaying means to the printed circuit board;
- fixing unit ((wrap-around metal frame 16), frame 16 held up the circuit board 19)) for fixing the printed circuit board to the receiving means.

wherein

- the printed circuit board 14 is fixed to the rear surface of the receiving unit to be placed between the receiving unit and the fixing unit (claim 14).
- the receiving unit includes a bottom chassis (mounting light 12) for receiving the display unit and a mold frame for receiving the bottom chassis (claim 15).
- the printed circuit board is overlapped with the fixing unit (claim 16).
- the fixing unit is a bracket having a first end combined with the printed circuit board and a second end combined with the rear surface of the printed circuit board (claim 17).
- The second end of fixing means is combined with a combination structure formed in the receiving means, so as to be fixed to the rear surface of the bottom chassis (claim 18).
- the fixing unit has a height less than a highest one of circuit elements constructing the printed circuit board (claims 19 and 42).

4. Claims 32-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee (US5815227A).

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Lee teaches (Fig. 4) a liquid crystal display device comprising:

- a lamp unit 125 for generating a light;
- a liquid crystal display panel (LCD 100) displaying an image in response to the light;
- receiving unit (light-inducing plate 105) for receiving the lamp unit and the liquid crystal display panel,

wherein

- a plurality of supporting members (locking protrusion a) is formed on a rear surface of the receiving means to prevent the receiving means from being inclined when the lamp unit is combined with the receiving means.
- the plurality of the supporting members is projected at a predetermined height on four corners of the rear surface of the receiving means (claim 33).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by Terao et al. (US6342932B).

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In regard to claim 1, Terao et al. teach (Figs. 1-3) a liquid crystal display device comprising:

- a light generating unit (light source 22 and light guiding plate 15) for generating a light;
- a receiving unit (holding member 10) for inserting the light generating unit into recess formed in a receiving unit (holding member 10).
- a power supplying unit (PCB 20) mounted on rear surface of the receiving unit for supplying a power to the light connecting unit;
- a fixing unit 16 formed on the receiving unit and guiding the power supply lines to the power supplying unit, the fixing unit 16 prevents the power supplying lines from being departed from the receiving unit or attaches the power supplying lines to the receiving unit;

wherein

- fixing unit is a plurality of projections 17 formed and spaced apart from one another at a predetermined distance on the rear surface of the receiving unit (claim 2);

6. Claims 6-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Yang (US6256075B1).

Yang teaches (Figs. 2-3) a liquid crystal display device comprising:

- displaying means (display panel 13) for displaying an image;
- receiving means for receiving the displaying means;

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- a printed circuit board 15 installed on a rear surface of the receiving means, for controlling an operation of the displaying means;
- shielding unit (40) mounted on the rear surface of the receiving means, for shielding an electromagnetic wave from the displaying means and the printed circuit board.
- a connecting cable for connecting the displaying means to the printed circuit board (claim 7).

wherein

- the printed circuit board 40 is power supplying means for supplying a power to the displaying means, which is mounted on the rear surface of the receiving unit, or converting unit for converting a signal supplied to the displaying unit, which is installed on the rear surface of the receiving means (claim 8).
- the shielding unit has a connection opening formed at a side wall thereof and power lines is connected to the printed circuit board (claim 9). Power lines are enhanced for supplying power to display device.
- the connection opening has a closed shape in that part of the connection opening is connected to each other, in order to improve a shielding efficiency of the electromagnetic wave by means of the shielding means (claim 10).
- the shielding unit 40 has a plurality of through-holes formed at a position corresponding to a predetermined portion of the power supplying means in order to discharge heat from the power supplying means (claim 11).

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- the plurality of through-holes 41 is formed to face of the printed circuit board, thereby, holes are faced to a transformer of the power supplying means on the printed circuit board.

7. Claims 20-23, 25 and 34-49 are rejected under 35 U.S.C. 102(e) as being anticipated by Terao et al. (US6342932B1).

In regard to claims 20, 25, 29 and 34, Terao et al. teach (Figs. 2-3) a liquid crystal display device comprising:

- an image displaying unit 11 displaying an image;
- receiving unit (holding member 10) receiving an image displaying unit and having at least one first locking structure (positioning bosses) formed on a rear surface
- a printed circuit board (flexible circuit board 12) installed on a rear surface of the receiving unit and controlling the displaying unit;
- fixing unit 17 combined with the printed circuit board and having at least one second locking structure (holes 20);
- shielding unit on holding member 10 (col. 2 lines 55-60) for shielding an electromagnetic wave from the printed circuit board, the shielding unit being mounted on the rear surface of the receiving unit and having at least one third locking structure 16,

wherein

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- the shielding unit and the printed circuit board are fixed to the receiving unit in such that a locking member 16 extends through the first, second and third locking structure from an outside of the shielding unit toward the displaying unit.
- the receiving unit includes a bottom chassis for receiving the displaying means and a mold frame for receiving the bottom chassis (claims 21 and 44).
- the fixing member 17 has a first end combined with the printed circuit board and a second end having the second locking structure combined with the first locking structure formed on the receiving unit (claims 22 and 45).
- an area of the shielding unit on which the third locking structure is formed is depressed toward the displaying unit (claims 23 and 49).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terao et al. (US6342932B) as applied to claims 1-2 above in view of Asano (US5048933A).

In regard to claim 3, Asano teaches a liquid crystal display device using the cold cathode type fluorescent lamp from the viewpoints of luminous intensity, temperature and life.

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In regard to claims 4-5, it is conventional art that the receiving unit comprising a bottom chassis for inserting (receiving) the light generating unit and mold frame for light weight.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device with the cold cathode type fluorescent lamp for effective luminous intensity, temperature and life.

9. Claims 26-28 and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terao et al. (US6342932B) as applied to claims 20-23, 25 and 34-49 above in view of Asano (US5048933A).

In regard to claim 29, Asano teaches a liquid crystal display device using the cold cathode type fluorescent lamp from the viewpoints of luminous intensity, temperature and life.

In regard to claims 26, it is conventional art that the receiving unit comprising a bottom chassis for inserting (receiving) the light generating unit and mold frame for light weight.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device with the cold cathode type fluorescent lamp for effective luminous intensity, temperature and life.

Allowable Subject Matter

Claim 24 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: there is no prior teaches the first locking structure on rear surface of receiving unit (343-345, Fig. 5), the second locking structure on PCB (930-932, Fig. 8) and the third locking structure on the shielding unit (343a-235a, Fig. 21), wherein the first, second and third locking structures are screw holes and a screws is extended through the crews holes.

Response to Arguments

Applicant's arguments filed on July 18, 2003 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are follows:

- A. Murai fails to disclose a receiving unit receiving the displaying unit.
- B. Gruenberg et al. fail to disclose a receiving unit receiving the displaying unit.
- C. Lee (US5815227A) fails to disclose the light inducing plate 105 receiving a liquid crystal display panel.
- D. Yang fails to disclose a panel driving printing board formed on a side of the LCD panel.

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- E. Yang fails to disclose a locking member extends through the first, second and third locking structure from an outside of the shielding unit toward the displaying unit.

Examiner's responses to Applicants' ONLY arguments are follows:

- A. Murai discloses the light guide plate 7 acting as a receiving unit receiving the displaying unit since the displaying unit lies on the light guide plate. The light guide inputs light into the displaying unit, thus the light guide receives the displaying unit for displaying image.

A specification of the instant application discloses (paragraph 85) "bottom chassis 300 for receiving the display unit 270", where bottom chassis 300 acting as a receiving unit receiving the displaying unit since the displaying unit lies on bottom chassis. Therefore, Murai discloses the displaying unit lies on the light guide plate, thereby, the displaying unit is received in or on the light guide plate.

- B. Gruenberg et al. disclose a receiving unit, which mounts a light 12 receiving the displaying unit for same reason as Murai A discussed above.

- C. Lee (US5815227A) discloses the light inducing plate 105 receiving a liquid crystal display panel. As same reason above, a liquid crystal lies on the light inducing plate, thus the light inducing plate 105 receives entirely a liquid crystal display panel.

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D. Claims 6 does not cite the limitation a panel driving printing board formed on a side of the LCD panel. Nowhere in specification and Figures show this feature "a panel driving printing board formed on a side of the LCD panel".

E. Amended claim 20 overcomes the Yang's reference. New reference of Terao et al. (US6342932B1) is now used.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (703)

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306-0472. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

HOAN C. NGUYEN
Examiner
Art Unit 2871

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